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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/703,419	11/01/2000	Eric Cohen	US000287	1395

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EXAMINER	
JERABEK, KELLY L	
ART UNIT	PAPER NUMBER
2622	
MAIL DATE	DELIVERY MODE
09/16/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/703,419	COHEN ET AL.	
	Examiner	Art Unit	
	KELLY L. JERABEK	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,6 and 10-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6 and 10-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/10/2009 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1, 4, 6, and 10-30 have been considered but are moot in view of the new ground(s) of rejection.

Election/Restrictions

Applicant's election with traverse of the second species in the reply filed on 7/23/2009 is acknowledged. The traversal is found persuasive and therefore the restriction requirement has been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 6, 10, 12-15 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Platte et al. US 4,864,409 in view of Nagasaki et al. US 5,506,912 and further in view of Saburi US 6,556,235.

Re claims 1 and 14, Platte discloses in figures 2 and 3 a video camera including an acceleration compensation apparatus. Platte mentions that portable (hand held) cameras have a risk of capturing adversely affected images due to inadvertent acceleration (shake) of the camera housing (col. 1, lines 14-20). It can be seen in figure 1A that the camera produces a video signal of a target (1) and the target (1) is scanned in only a desired field (2) (col. 2, lines 14-27). Therefore, the camera is provided with a wide field of view (1). It can be seen in figure 2 that the camera housing (3) includes acceleration sensors (4,5) capable of continuously detecting relative movement between the camera and on object of interest (col. 2, line 47 – col. 3, line 19). The

camera also has the capability of continuously electronically adjusting the camera without the use of a motor in response to the detected relative movement so as to maintain a desired framing and tracking of the object of interest within an image, for providing a stable image in event of an inadvertent acceleration of the camera housing (eg. Movement of a user's hand holding the camera) (col. 2, line 47- col. 4, line 7). However, although the Platte reference discloses all of the above limitations it fails to specifically disclose that the video camera tracks an object of interest within a displayed image generated by the video camera, wherein detecting relative movement depends on the tracking of an object of interest.

Nagasaki discloses an imaging device that includes an imaging section (7) that is positioned by means of a negative feedback control, wherein the imaging section (7) tracks an object of interest and detects relative movement associated with the imaging device (col. 8, line 66-col. 9, line 15; col. 10, lines 1-24). Therefore, it would have been obvious for one skilled in the art to have been motivated to include the method of tracking an object of interest in an imaging device in order to detect relative movement between the imaging device and an object as disclosed by Nagasaki in the video camera disclosed by Platte. Doing so would provide a means for compensating for displacement between an imaging device and an object to be imaged in order to continuously track an object of interest.

Although the combination of the Platte and Nagasaki references discloses all of the above limitations the combination does not distinctly disclose that the camera is capable of being integrated into telephone.

Saburi discloses in figures 1-3 a portable videophone unit. The portable videophone unit body (20a) is provided with a camera (22) for taking images (col. 3, lines 32-54). Captured images may then be transmitted to other devices (col. 5, lines 35-48). Therefore, it would have been obvious for one skilled in the art to have been motivated to integrate the camera including an acceleration compensation apparatus disclosed by the combination of the Platte and Nagasaki references into hand-held telephone as disclosed by Saburi. Doing so would provide a means for allowing a user to transmit and receive images at a variety of locations (Saburi: col. 1, lines 6-9).

Re claim 4, the videophone disclosed by Saburi includes keys (23) that a user may press to perform certain functions (col. 3, lines 47-54). Therefore, the camera in the videophone is physically adjustable by a user.

Re claim 6, Platte states that voltages furnished by acceleration sensors (4) for x direction, (5) for y direction, are fed to a processor (8) which generates an address signal (Adr) and the address signal (Adr) controls the starting point (S) of the scanning raster of field (2) (col. 2, line 47-col. 3, line 19). Therefore, the camera has a solely electronically adjustable pan setting (corresponding to the voltage for the x direction) and an adjustable tilt setting (corresponding to the voltage for the y direction) performed without the use of a motor.

Re claim 10, Platte discloses a step of continuously electronically adjusting a camera based on an output of an orientation determination device (acceleration sensors 4,5) for detection relative movement between a camera and an object or interest caused by an inadvertent acceleration (eg. Movement of a user's hand) (col. 2, line 47 – col. 4, line 7).

Re claim 12, Platte states that the electronic adjustment of the camera (address signal for choosing the starting point S for raster scanning) may also be based on an output of an image processing operation applied to an image generated by the camera (col. 3, line 34-col. 4, line 7).

Re claim 13, Platte states that the electronic adjustment of the camera (address signal for choosing the starting point S for raster scanning) is based on an orientation determination (acceleration sensors 4,5) and an image processing operation (scanning raster of field (2) (col. 2, line 47 – col. 3, line 19).

Re claim 15, see claim 1. The camera disclosed by Platte includes a processor (8) used to generate address signals based on voltage readouts of acceleration sensors (4,5) (col. 2, line 47 – col. 3, line 19). Therefore, it can be seen that the processor (8) of the camera includes a program for tracking an object of interest as disclosed in claim 1 above.

Re claims 25-26, the Nagasaki reference discloses that relative movement between an imaging device and an object of interest is detected by processing either a single movement or a plurality of movements (the imaging section 7 tracks an object of interest regardless of the movement of the object) (col. 9, line 66-col. 10, line 24).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Platte et al. US 4,864,409 in view of Nagasaki et al. US 5,506,912 in view of Saburi US 6,556,235 and further in view of Vincent 6,195,122.

Re claim 11, the combination of the Platte, Nagasaki and Saburi references includes all of the limitations of claim 1 above. However, the combination of the Platte, Nagasaki and Saburi references does not disclose an orientation determination device such as a gyroscope

Vincent discloses in figure 1 a tracking data acquisition unit (105) attached to a video camera (120). As shown in figure 2, the tracking data acquisition unit (105) includes two gyroscopes (400, 410) for measuring the rotation of the camera along the x and y axes in order to determine the orientation of the camera (col. 6, lines 1-15). Therefore, it would have been obvious for one skilled in the art to have been motivated to include the gyroscopes (400 and 410) for measuring the rotation of the camera as disclosed by Vincent in the portable videophone capable of tracking an object disclosed by the combination of Platte, Nagasaki and Saburi. Doing so would provide a means for

sensing all rotational motions of a video camera in order to determine the orientation of the camera and the distance to the object (Vincent: col. 2, lines 36-45).

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Platte et al. US 4,864,409 in view of Nagasaki et al. US 5,506,912 in view of Saburi US 6,556,235 and further in view of Koyanagi et al. US 6,323,898.

Re claims 16-17, the combination of the Platte, Nagasaki and Saburi references discloses all of the limitations of claim 1 above. However, although the combination of the references discloses a method of detecting relative movement between an imaging device and an object of interest it fails to specifically disclose that the method of detecting relative movement occurs in response to manual initialization by a user.

Koyanagi discloses an imaging device that is capable of tracking an imaging object. The imaging device disclosed by Koyanagi includes a detection imaging object setting apparatus (13) that is manually operated to start a tracking of an imaging object (col. 13, lines 39-67). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a manual setting apparatus for allowing a user to manually initialize detection of relative movement between an imaging device and an object as disclosed by Koyanagi in the video camera disclosed by the combination of the Platte, Nagasaki and Saburi references. Doing so would provide a means for allowing a user

to manually select a camera mode for detecting relative movement between the camera and an object of interest.

Re claim 18, the combination of the Platte, Nagasaki, Saburi and Koyanagi references discloses all of the limitations of claim 16 above. Additionally, Koyanagi discloses that it is well known in the digital imaging art for an imaging apparatus to manually start a tracking of an imaging object (col. 13, lines 39-67). However, the combination fails to specifically state that the initialization is a voice-activated initialization. However, the Examiner takes **Official Notice** that it is well known in the digital imaging art for a digital camera to include the capability of activating certain camera functions by a voice-activation method. Therefore, it would have been obvious for one skilled in the art to have been motivated to include a method for initializing camera operations by a voice-activation control in the video camera disclosed by the combination of the Platte, Nagasaki, Saburi and Koyanagi references. Doing so would provide a means for allowing a user to easily activate certain camera functions by verbally speaking control commands.

Claims 19-24 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Platte et al. US 4,864,409 in view of Nagasaki et al. US 5,506,912 in view of Saburi US 6,556,235 and further in view of Hartley (Self-Calibration of Stationary Cameras).

Re claim 19, the combination of the Platte, Nagasaki and Saburi references discloses all of the limitations of claim 1 above. However, although the combination of the references discloses a method of detecting relative movement between an imaging device and an object of interest it fails to specifically disclose that the camera is electronically configured to include a plurality of calibration parameters represented as an upper triangular matrix.

Hartley discloses a method for self-calibration of stationary cameras. Hartley specifically discloses that it is well known for digital cameras to include a plurality of calibration parameters represented as an upper triangular matrix (K) (Hartley, section 2 (The Camera Model)). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a plurality of calibration parameters represented as an upper triangular matrix as disclosed by Hartley in the video camera disclosed by the combination of the Platte, Nagasaki and Saburi references. Doing so would provide a means for successfully calibrating a digital camera.

Re claim 20, the combination of the Platte, Nagasaki, Saburi and Hartley references discloses all of the limitations of claim 19 above. However, the combination fails to specifically state that it is well known in the digital imaging art for camera calibration parameters to be adjusted at a time of manufacturing of a camera. However, the Examiner takes **Official Notice** that it is well known in the digital imaging art for a digital

camera to be calibrated at a time of manufacturing the camera and cannot be subsequently modified by the user of the camera. Therefore, it would have been obvious for one skilled in the art to have been motivated to calibrate the video camera disclosed by the combination of the Platte, Nagasaki, Saburi and Koyanagi references at a time of manufacturing the camera. Doing so would provide a means for ensuring that the calibration parameters of a camera are not incorrectly adjusted by a novice camera user.

Re claims 21-22 and 24, the Hartley reference further discloses that the plurality of calibration parameters of the matrix (K) are adjusted based on one or more actions performed by the user of the camera that include zoom setting actions (camera parameters are adjusted when a camera has a zoom lens) (Hartley, Section 15 (Conclusions)).

Re claim 23, the combination of the Platte, Nagasaki and Saburi references discloses all of the limitations of claim 1 above. However, although the combination of the references discloses a method of detecting relative movement between an imaging device and an object of interest it fails to specifically disclose that the camera is electronically configured to include a plurality of calibration parameters represented by a plurality of matrices.

Hartley discloses a method for self-calibration of stationary cameras. Hartley specifically discloses that it is well known for digital cameras to include a plurality of calibration parameters represented by a plurality of matrices (M,R,K) (Hartley, section 2 (The Camera Model)). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a plurality of calibration parameters represented by a plurality of matrices as disclosed by Hartley in the video camera disclosed by the combination of the Platte, Nagasaki and Saburi references. Doing so would provide a means for successfully calibrating a digital camera.

Re claim 27, the combination of the Platte, Nagasaki and Saburi references discloses all of the limitations of claim 1 above. However, although the combination of the references discloses a method of detecting relative movement between an imaging device and an object of interest it fails to specifically disclose that the camera is electronically configured to include a plurality of calibration parameters represented as a homography matrix, where the homography matrix is composed of a rotation matrix and a calibration matrix.

Hartley discloses a method for self-calibration of stationary cameras. Hartley specifically discloses that it is well known for digital cameras to include a plurality of calibration parameters represented as a homography matrix (M), where the homography matrix (M) is composed of a rotation matrix (R) and a calibration matrix (K) (Hartley, section 2 (The Camera Model)). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a plurality of calibration

parameters represented as a homography matrix as disclosed by Hartley in the video camera disclosed by the combination of the Platte, Nagasaki and Saburi references. Doing so would provide a means for successfully calibrating a digital camera.

Re claims 28-30, the combination of the Platte, Nagasaki and Saburi references discloses all of the limitations of claim 1 above. However, although the combination of the references discloses a method of detecting relative movement between an imaging device and an object of interest it fails to specifically disclose that the framing of the object involves creating a model of an object wherein the model is compared against a predetermined model and adjusted on a history of prior obtained plurality of calibration parameters used to represent one or more matrices used for the framing and tracking of an object.

Hartley discloses a method for self-calibration of stationary cameras. Hartley specifically discloses that it is well known for digital cameras to include a framing of an object that involves creating a model of an object wherein the model is compared against a predetermined model and adjusted on a history of prior obtained plurality of calibration parameters used to represent one or more matrices used for the framing and tracking of an object (Hartley, section 2 (The Camera Model)). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a model of an object as disclosed by Hartley in the video camera disclosed by the combination of the Platte, Nagasaki and Saburi references. Doing so would provide a means for successfully calibrating a digital camera.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached at **(571) 272-3022**. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kelly L. Jerabek/
Examiner, Art Unit 2622